Bench Mark: Chisel "X" on chain bolt of fire hydrant in front of 555 W. Harrison St. Elev. 594.46.

Existing Structure: None.

The existing Ramp WS Bridge (S.N. 016-1715) will be closed and traffic will be detoured during construction. Traffic on I-290 and I-90/94 will be maintained with stage construction.

No Salvage.

NOTES:

1. Wall offsets are measured from the ℄ of Ramp WS to the front face of panels.
2. F.F. denotes Front Face.
3. B.F. denotes Back Face.
4. All proposed drainage structure locations along I-90/94 are conceptual at this stage and are subject to refinement during final design.
5. Soldier Pile section, shaft diameter, spacing and tip elevation to be determined during final design.

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications 7th Edition with 2015 and 2016 Interim Specifications

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

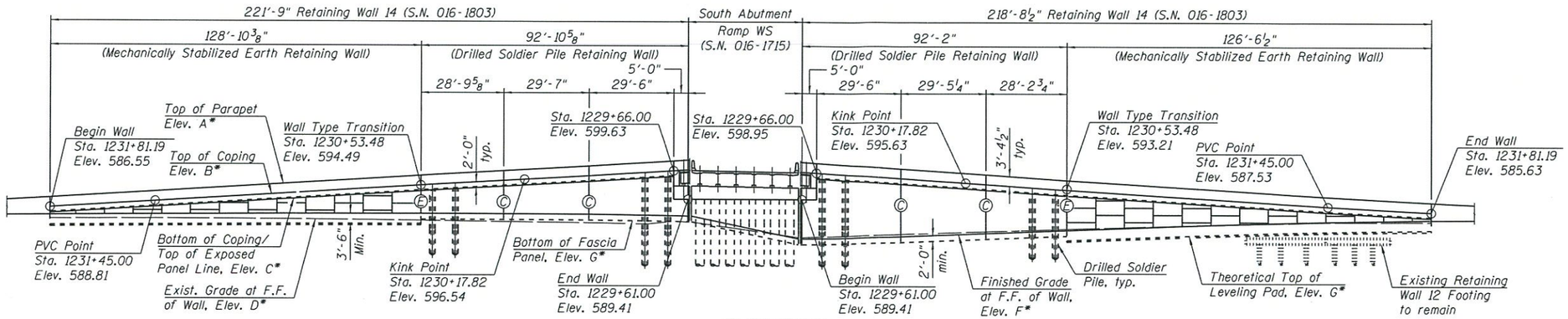
f'c = 4,500 psi

SOLDIER PILES

fy = 50,000 psi (AASHTO M270 Gr. 50)

WALL DEFLECTION CRITERIA:

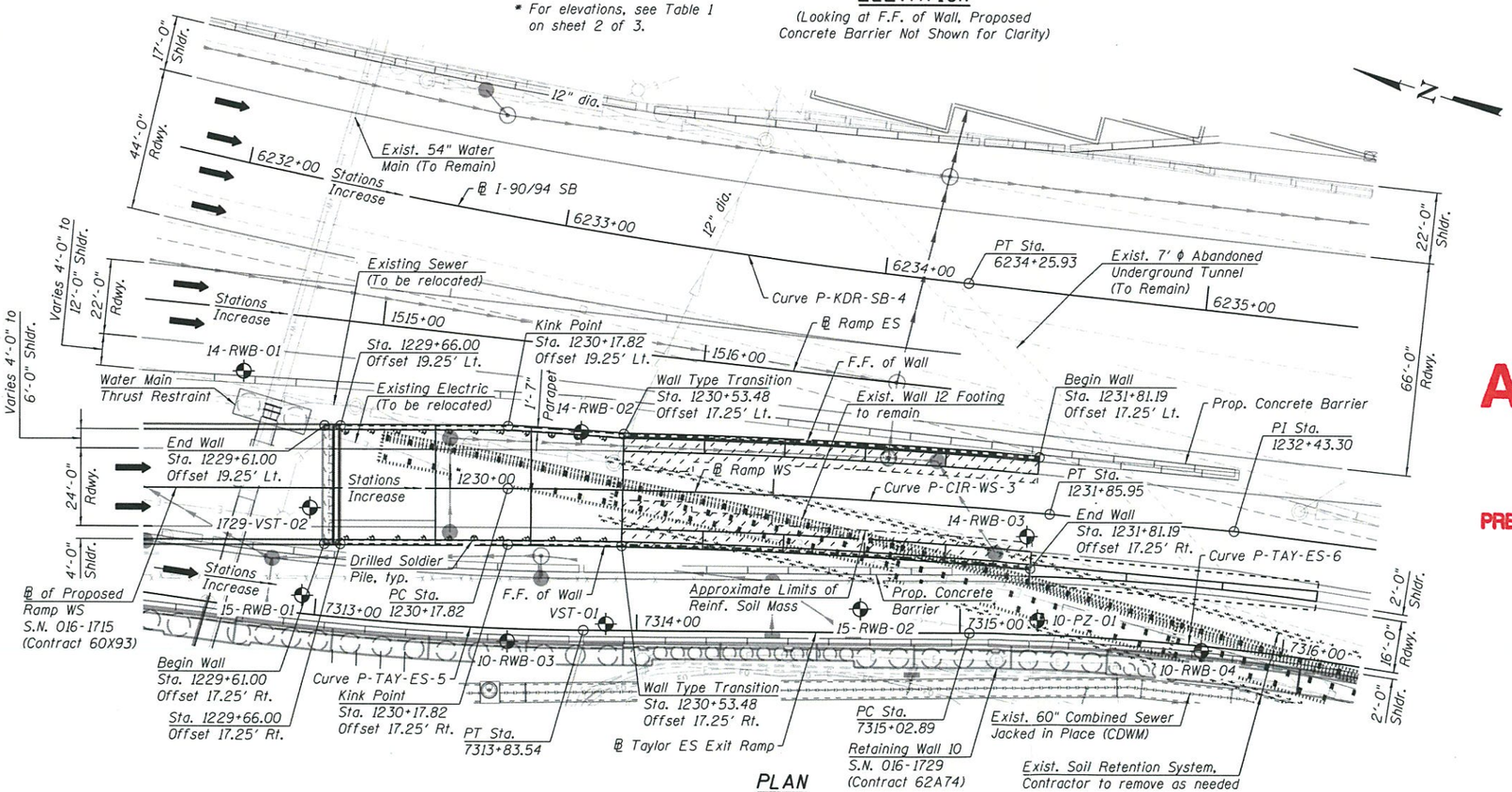
Maximum total lateral wall deflection at top of wall: 1 inch.



* For elevations, see Table 1 on sheet 2 of 3.

ELEVATION

(Looking at F.F. of Wall, Proposed Concrete Barrier Not Shown for Clarity)



PLAN

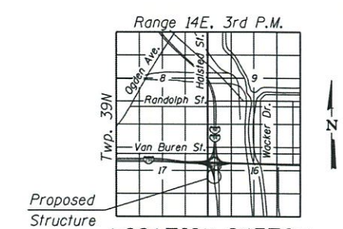
LEGEND

Electric	E	Light Pole	
Water	W	Soil Boring	
Exist. Storm Sewer		Construction Joint	C
Prop. Storm Sewer		Expansion Joint	E
Combined Sewer		Limits of Soil Reinforcement	
Prop. Catch Basin			

APPROVED

MAY 24 2018

AS A BASIS FOR PREPARATION OF DETAILED PLANS



LOCATION SKETCH

GENERAL PLAN
RETAINING WALL 14 ALONG RAMP WS
F.A.I 94 (I-290 WB TO I-90/94 SB)
SECTION 2014-013 R&B-R
COOK COUNTY
STATION 1229+61.00 TO STATION 1231+81.19
STRUCTURE NO. 016-1803

TranSystems

USER NAME = jrmickens	DESIGNED - JM	REVISED -	
	CHECKED - WJC	REVISED -	
PLOT SCALE = 42.666667 ' / in.	DRAWN - JM	REVISED -	
PLOT DATE = 4/10/2018	CHECKED - WJC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 3 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	3	1
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

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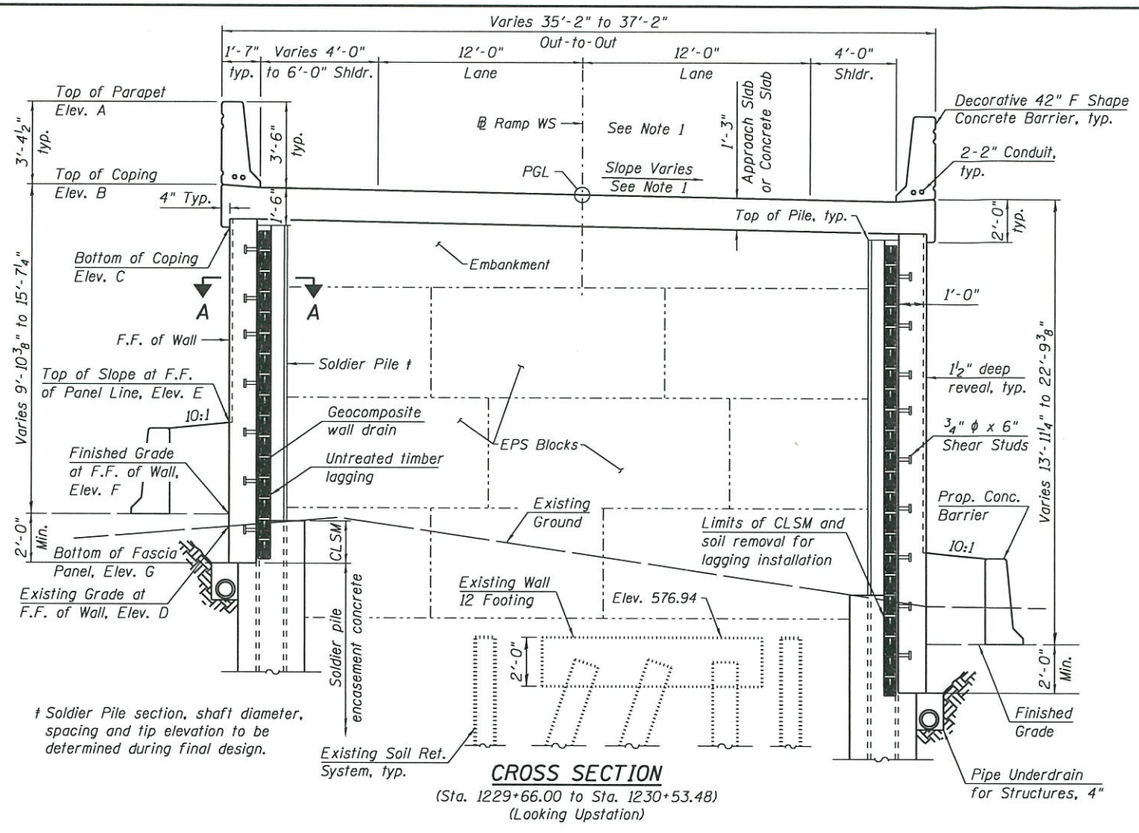
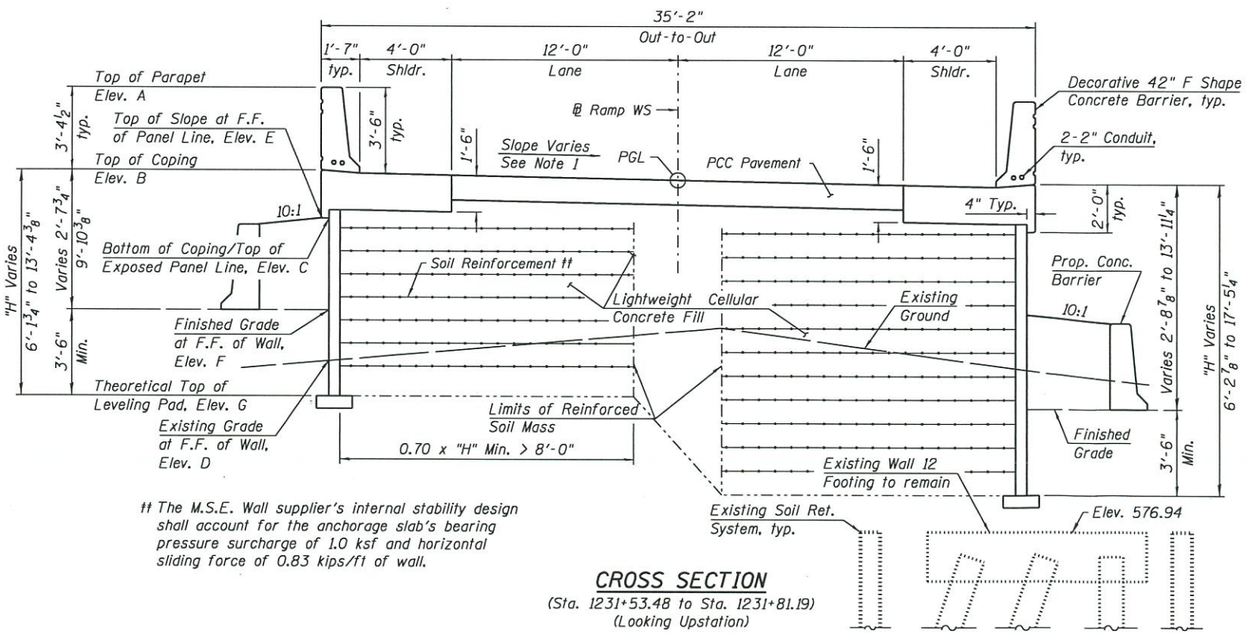


† Soldier Pile section, shaft diameter, spacing and tip elevation to be determined during final design.

CROSS SECTION

(Sta. 1229+66.00 to Sta. 1230+53.48)
(Looking Upstation)



†† The M.S.E. Wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 1.0 ksf and horizontal sliding force of 0.83 kips/ft of wall.

CROSS SECTION

(Sta. 1231+53.48 to Sta. 1231+81.19)
(Looking Upstation)

TABLE 1 - MSE WALL ELEVATIONS

	Station	Offset	Elevation A	Elevation B	Elevation C	Elevation D	Elevation E	Elevation F	Elevation G	Wall Type
	1231+81.19	17.25' Lt.	589.92	586.55	584.55	582.60	587.41	583.91	580.41	MSE Wall
	1231+75.00	17.25' Lt.	590.30	586.93	584.93	582.64	587.49	583.99	580.49	
	1231+45.00	17.25' Lt.	592.19	588.81	586.81	582.78	587.98	584.23	580.73	
	1231+25.00	17.25' Lt.	593.43	590.05	588.05	582.75	588.21	584.36	580.86	
	1231+00.00	17.25' Lt.	594.98	591.60	589.60	582.68	588.52	584.51	581.01	
	1230+75.00	17.25' Lt.	596.53	593.15	591.15	582.47	588.78	584.60	581.10	
*	1230+53.48	17.25' Lt.	597.86	594.49	592.49	582.24	588.98	584.62	581.12	
**	1230+53.48	17.25' Lt.	597.86	594.49	592.49	582.24	588.98	584.62	582.62	Drilled Shafts Wall
	1230+50.00	17.44' Lt.	598.09	594.71	592.71	582.19	588.99	584.62	582.62	
	1230+25.00	18.85' Lt.	599.51	596.14	594.14	581.87	588.98	584.57	582.57	
	1230+17.82	19.25' Lt.	599.91	596.54	594.54	581.79	588.95	584.55	582.55	
	1229+95.50	19.25' Lt.	601.18	597.80	595.80	581.51	588.97	584.45	582.45	
	1229+75.00	19.25' Lt.	602.45	599.07	597.07	581.13	588.83	584.19	582.19	
	1229+66.00	19.25' Lt.	603.01	599.63	597.63	582.13	588.72	584.03	582.03	
	1229+61.00	19.25' Lt.	-	-	589.41	581.87	588.66	583.94	581.94	
	1229+61.00	17.25' Rt.	-	-	589.41	576.55	579.84	576.08	574.08	Drilled Shafts Wall
	1229+66.00	17.25' Rt.	602.33	598.95	596.95	576.74	579.98	576.17	574.17	
	1229+75.00	17.25' Rt.	601.77	598.39	596.39	577.05	580.24	576.35	574.35	
	1229+95.50	17.25' Rt.	600.50	597.12	595.12	577.80	581.03	576.99	574.99	
	1230+17.82	17.25' Rt.	599.01	595.63	593.63	578.56	582.02	577.88	575.88	
	1230+25.00	17.25' Rt.	598.51	595.14	593.14	578.79	582.32	578.16	576.16	
	1230+50.00	17.25' Rt.	596.80	593.42	591.42	579.58	583.30	579.14	577.14	
*	1230+53.48	17.25' Rt.	596.58	593.21	591.21	579.72	583.42	579.27	577.27	
**	1230+53.48	17.25' Rt.	596.58	593.21	591.21	579.72	583.42	579.27	575.77	MSE Wall
	1230+75.00	17.25' Rt.	595.25	591.87	589.87	580.35	584.20	580.09	576.59	
	1231+00.00	17.25' Rt.	593.70	590.32	588.32	581.06	585.07	581.04	577.54	
	1231+25.00	17.25' Rt.	592.15	588.77	586.77	581.66	585.76	581.84	578.34	
	1231+45.00	17.25' Rt.	590.91	587.53	585.53	582.17	586.15	582.33	578.83	
	1231+75.00	17.25' Rt.	589.29	585.92	583.92	582.27	586.44	582.83	579.33	
	1231+81.19	17.25' Rt.	589.00	585.63	583.63	582.29	586.47	582.89	579.99	

Elevation A- Top of Parapet
Elevation B- Top of Coping
Elevation C- Bottom of Coping / Top of Exposed Panel Line
Elevation D- Existing Grade at F.F. of Wall
Elevation E- Top of Slope at F.F. of Wall
Elevation F- Finished Grade at F.F. of Wall
Elevation G- Theoretical Top of Leveling Pad / Bottom of Fascia Panel

* Elevations just to the left of joint
** Elevations just to the left of joint

APPROVED
MAY 24 2018
AS A BASIS FOR PREPARATION OF DETAILED PLANS

CURVE DATA

(Taylor ES Exit Ramp)

P-TAY-ES-5
P.I. Sta. = 7313+24.65
Δ = 7° 47' 11" (LT)
D = 6° 36' 03"
R = 868.00'
T = 59.07'
L = 117.96'
E = 2.01'
e = 4.40%
T.R. = NA'
S.E. Run = 114'
P.C. Sta. = 7312+65.57
P.T. Sta. = 7313+83.54

P-TAY-ES-6
P.I. Sta. = 7315+63.15
Δ = 8° 44' 46" (RT)
D = 7° 16' 16"
R = 788.00'
T = 60.26'
L = 120.29'
E = 2.30'
e = 4.60%
T.R. = NA'
S.E. Run = 119'
P.C. Sta. = 7315+02.89
P.T. Sta. = 7316+23.18

CURVE DATA

(Ramp WS)

P-CIR-WS-3
P.I. Sta. = 1231+01.94
Δ = 5° 04' 12" (RT)
D = 3° 00' 56"
R = 1,900.00'
T = 84.12'
L = 168.13'
E = 1.86'
e = 4.00%
T.R. = NA
S.E. Run = 44'
P.C. Sta. = 1230+17.82
P.T. Sta. = 1231+85.95

CURVE DATA

(I-90/94 SB)

P-KDR-SB-4
P.I. Sta. = 6231+84.46
Δ = 13° 18' 21" (LT)
D = 2° 44' 34"
R = 2,089.00'
T = 243.66'
L = 485.13'
E = 14.16'
e = 4.40%
T.R. = NA'
S.E. Run = 164'
P.C. Sta. = 6229+40.80
P.T. Sta. = 6234+25.93

NOTES:

1. Direction of slope referenced from right edge of pavement.
   Constant Cross Slope (2.00%) Sta. 1226+31.89 to Sta. 1230+03.45
   Slope Transition (2.00% to 4.00%) Sta. 1230+03.45 to Sta. 1230+47.45
   Constant Cross Slope (4.00%) Sta. 1230+47.45 to Sta. 1231+56.32
   Slope Transition (4.00% to 2.00%) Sta. 1231+56.32 to Sta. 1232+00.32
   Constant Cross Slope (2.00%) Sta. 1232+00.32 to Sta. 1233+72.63
2. The overlapping sections of the MSE wall with the abandoned wall footing will require special MSE wall installation and design to ensure that excessive differential settlement between the MSE wall and the rigid existing footing supported on deep foundations are minimized.

CROSS SECTIONS
RETAINING WALL 14 ALONG RAMP WS
F.A.I. 94 (I-290 WB TO I-90/94 SB)
SECTION 2014-013 R&B-R
COOK COUNTY
STATION 1229+61.00 TO STATION 1231+81.19
STRUCTURE NO. 016-1803

TranSystems

USER NAME = jrmickens	DESIGNED - JM	REVISED -
	CHECKED - WJC	REVISED -
PLOT SCALE = 6.0000 ' / in.	DRAWN - JM	REVISED -
PLOT DATE = 4/10/2018	CHECKED - WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 2 OF 3 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	3	2
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

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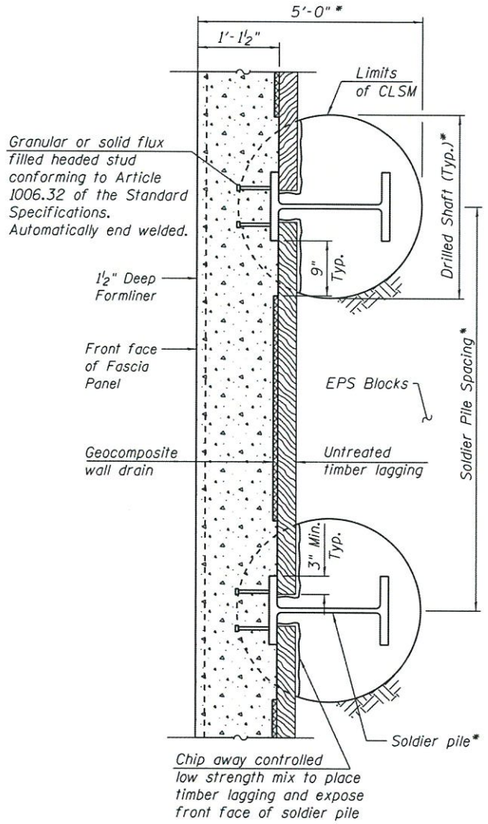
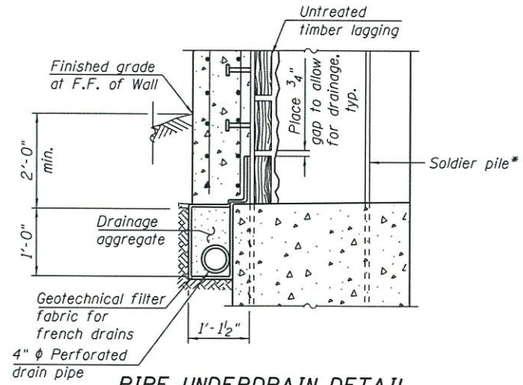
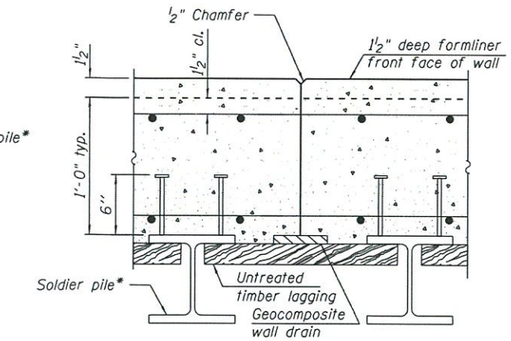


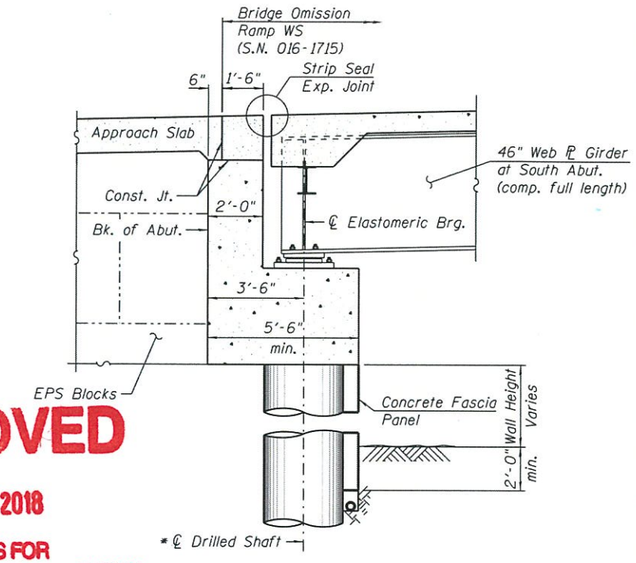
SECTION A-A



PIPE UNDERDRAIN DETAIL AT SOLDIER PILE



CONSTRUCTION JOINT DETAILS



SECTION THRU ABUTMENT

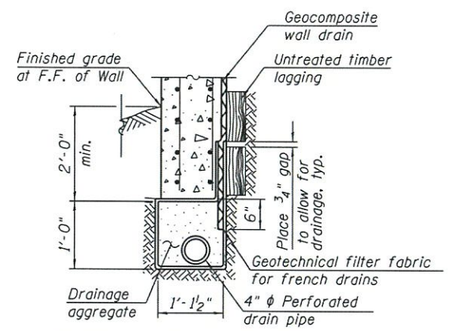
(Horiz. Dim. @ Rt. L's)

* Size, spacing, depth and number to be determined in design.

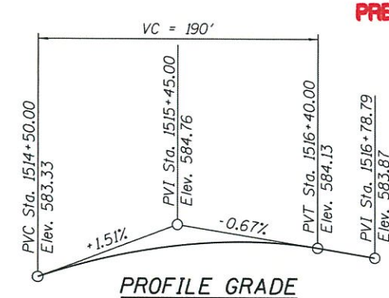
APPROVED

MAY 24 2018

AS A BASIS FOR PREPARATION OF DETAILED PLANS

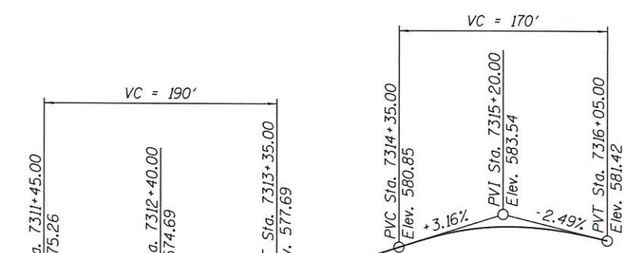


PIPE UNDERDRAIN DETAIL BETWEEN SOLDIER PILES



PROFILE GRADE

(Along ℄ Ramp ES)



PROFILE GRADE

(Along ℄ Taylor ES Exit Ramp)

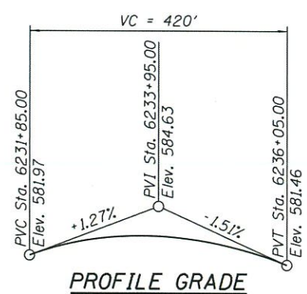
HIGHWAY CLASSIFICATION

Ramp WS
Functional Class: Interstate
ADT: 7,200 (2012); 8,000 (2040)
ADTT: 114 (2012); 127 (2040)
DHV: 710 (2040)
Design Speed: 25 m.p.h.
Posted Speed: 25 m.p.h.
One-Way Traffic
Directional Distribution: 100%

Ramp ES
Functional Class: Interstate
ADT: 43,900 (2012); 43,000 (2040)
ADTT: 4,386 (2012); 4,296 (2040)
DHV: 2,060 (2040)
Design Speed: 40 m.p.h.
Posted Speed: 40 m.p.h.
One-Way Traffic
Directional Distribution: 100%

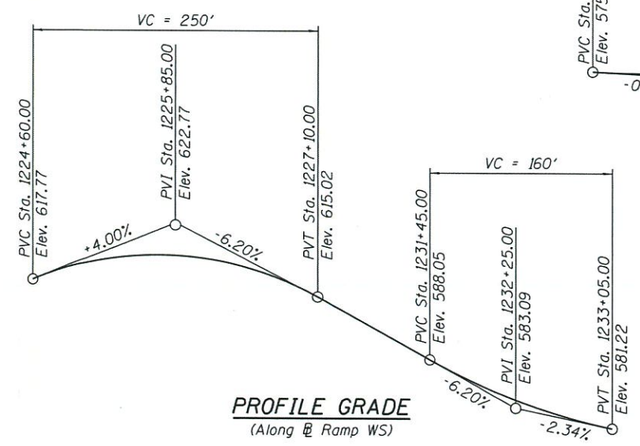
SB I-90/94
Functional Class: Interstate
ADT: 100,100 (2012); 98,000 (2040)
ADTT: 11,351 (2012); 11,113 (2040)
DHV: 6,340 (2040)
Design Speed: 60 m.p.h.
Posted Speed: 45 m.p.h.
One-Way Traffic
Directional Distribution: 100%

Taylor ES Exit Ramp
Functional Class: Interstate
ADT: NA (2012); 2,000 (2040)
ADTT: NA (2012); 60 (2040)
DHV: 150 (2040)
Design Speed: 35 m.p.h.
Posted Speed: NA m.p.h.
One-Way Traffic
Directional Distribution: 100%



PROFILE GRADE

(Along ℄ SB I-90/94)



PROFILE GRADE

(Along ℄ Ramp WS)

DETAILS
RETAINING WALL 14 ALONG RAMP WS
F.A.I. 94 (I-290 WB TO I-90/94 SB)
SECTION 2014-013 R&B-R
COOK COUNTY
STATION 1229+61.00 TO STATION 1231+81.19
STRUCTURE NO. 016-1803

TranSystems

USER NAME = jrmickens	DESIGNED - JM	REVISED -	
	CHECKED - WJC	REVISED -	
PLOT SCALE = 6.0000 ' / in.	DRAWN - JM	REVISED -	
PLOT DATE = 4/18/2018	CHECKED - WJC	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 3 OF 3 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	3	3
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

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